

Application No.: 09/870,397

Docket No.: 21581-00271-US

REMARKS

Claims 13-22 are now in the application. Claim 13 has been amended by deleting "a terminal hydroxyl group". Accordingly claims 1-12, 24 and 25 have been canceled. The amendment to claim 13 merely selects one terminal group from two terminal groups originally claimed, and does not raise new issues. Claim 20 has been amended by deleting "or a hydroxyl-containing substituent". Claim 21 has been amended to also recite "acyloxy", which is supported in the original claim, and was inadvertently omitted from claim 21.

The rejection of claims 21 and 22 under 35 U.S.C. §112 second paragraph has been overcome by the above amendments to the claims.

The rejections of claims 13-20 and 25 over Matyjaszewski et al. under 35 U.S.C. §102 (e), of claims 13-16 and 25 over Bronstert et al. under 35 U.S.C. §102 (b) and of claims 19-20 over Bronstert et al under §102 (b) or §103 (a) have overcome by the above amendments to claim 13.

By the above amendment, claim 13 relates to a vinyl polymer having a terminal silyl group and no longer relates to a vinyl polymer having a terminal hydroxyl group. Therefore, the above rejections are no longer applicable.

Claims 13-22 and 24 were rejected over Antonelli et al. under 35 U.S.C. §103 (a). Antonelli et al fail to render obvious the present invention.

The present invention after the above amendments relates to a vinyl polymer which has at least one terminal functional group per molecule and has a ratio of weight average molecular weight to number average molecular weight of less than 1.8; with the terminal functional group being a crosslinking silyl group of the general formula (1).

On the other hand, Antonelli relates to a method of free radical polymerization of unsaturated monomers to make a polymer having reactive functionality, comprising (a) reacting a macromonomer having the end group $-\text{CH}_2-\text{C}(=\text{CH}_2)\text{X}$ for chain transfer with a mixture of monomers having a reactive functionality, and (b) forming a polymer having $-\text{CH}_2-\text{C}(=\text{CH}_2)\text{X}$

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at substantially all terminals. As appreciated by the Examiner, the terminal silyl group of formula (1) in the polymer of the present invention differs from the terminal group $-\text{CH}_2-\text{C}(=\text{CH}_2)\text{X}$ in the polymer of the reference. Namely, in the terminal functional group, X is $-\text{CONR}_2$, $-\text{COOR}^1$, $-\text{OR}^1$, $-\text{OCOR}$, $-\text{OCOOR}^1$, $-\text{NRCOOR}^1$, halo, cyano or a substituted aryl, and silyl is only described as an embodiment of R and R^1 . Moreover, the object of the reference is controlling or reducing the molecular weight of the produced polymer by using the macromonomer ($\text{Mw}/\text{Mn} = 2-100$) having the terminal group $-\text{CH}_2-\text{C}(=\text{CH}_2)\text{X}$ as a chain transfer. Thus, the reference fails to disclose or suggest the specific vinyl polymer having the terminal silyl group (1) of the present invention. Therefore, one skilled in the art would not have appreciated the present invention from the reference. Accordingly, the present invention is unobvious over Antonelli et al.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

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